Is Economic Freedom Associated with Urban Development?

Evidence from US Metropolitan Areas

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Abstract

In this paper, I present a framework for analyzing city competition that clarifies the different dimensions along which cities can compete with one another for people and firms. I contend that current urban development strategies are largely based on a "hydraulic" approach to development and discuss an alternative that focuses on policies and the amount of local government impediments to urban development that exist across cities. Using a sample of 381 metropolitan statistical areas (MSAs) and an MSA economic freedom index from an article by economist and policy analyst Dean Stansel, I find that MSAs with fewer government impediments experienced more per capita income growth from 2002 to 2005 and from 2002 to 2011. I also find that MSAs with more tax freedom experienced more population growth from 2002 to 2011 and from 2002 to 2015. These findings are evidence that government impediments to economic activity can affect local intensive and extensive economic growth, and they are consistent with several country- and state-level studies.

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Not house finely roofed, or stones of walls well built, nor canals nor dockyards
makes the city, but men able to use their opportunity.
—Alcaeus of Mytilene, frag. 28, Edmonds

Since the mid-20th century many US cities have experienced dramatic decreases in population.[1] This population decline has generated substantial interest from scholars and government officials at all levels.

Efforts to generate urban development in America's declining cities take a variety of forms, but nearly all of them focus on building or renovating things. New parks, new roads, new trains or street cars, new downtowns, new office parks, and new sports stadiums are some of the most common proposed solutions for halting or reversing urban decline. Research by new institutional economists, however, reveals that good institutions are a precondition for development to occur. How much economic development occurs in a given urban area depends on local rules and economic policies.

The popular approach to modern urban development closely resembles the early and still popular approach to foreign economic development that emphasizes physical investment. The Harrod-Domar model and its successor, the Solow model, both emphasize the importance of capital investment as a catalyst for economic development. In theory, capital increases the marginal productivity of workers and raises per capita incomes, so more capital investment should generate economic growth. Nobel Prize–winning economist Angus Deaton calls this idea

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[1] Anthony Downs, "The Challenge of Our Declining Big Cities," *Housing Policy Debate* 8, no. 2 (1997): 359–408.

the hydraulic approach to economic development: if money flows in at one end, development will flow out the other.[2]

Toward the end of the 20th century, new institutional economists such as Douglass North and Oliver Williamson initiated a resurgence in thinking about the role that government policies and institutions play in economic development.[3] The lesson that emerged from this research is that institutions and policies matter, and one should not expect capital investment to generate economic development in places with poor institutions or overly complex rules that hamper productive economic activity.

The insight that institutions and rules matter filtered down to the local level. In 1997, Harvard Business School economist Michael Porter noted that regulatory barriers and red tape could prevent private investment in declining inner cities.[4] Porter argued that creating a favorable environment for business (i.e., altering rules) could help generate economic development within cities. Economic geographer Michael Storper also suggests that local-level institutions could be the key forces that enable or stymie economic specialization and development.[5] Yet many studies that examine local and regional economic development routinely omit any measure of local rules,[6] possibly because of the difficulty of measuring them in a way that is compatible with multivariable regression analysis.

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[2] Angus Deaton, *The Great Escape: Health, Wealth, and the Origins of Inequality* (Princeton, NJ: Princeton University Press, 2013).

[3] Douglass C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge, UK: Cambridge University Press, 1990); Oliver E. Williamson, "The Institutions and Governance of Economic Development and Reform," *World Bank Economic Review* 8, suppl. 1 (1994): 171–97.

[4] Michael E. Porter, "New Strategies for Inner-City Economic Development," *Economic Development Quarterly* 11, no. 1 (1997): 11–27.

[5] Michael Storper, "Why Does a City Grow? Specialisation, Human Capital or Institutions?," *Urban Studies* 47, no. 10 (2010): 2027–50.

[6] See, for example, Daniel A. Hartley, Nikhil Kaza, and T. William Lester, "Are America's Inner Cities Competitive?," *Economic Development Quarterly* (2016): 1–22.

Institutions that are commonly accepted as being pro-growth are well-defined property rights, rule of law, and a market economy with a well-functioning price system that leaves the majority of productive resources in the hands of economic agents who are guided by profit and loss. Just below the institutional level are the actual rules and policies in place, which at the municipal level consist of tax policy, business regulations, land-use regulations, and various legal ordinances. The rules and laws of a municipality also affect the size and provision of government goods and services, such as roads, police protection, fire protection, and water and sewage services.

In this paper, I present a framework for thinking about the local-level variables that affect urban development. I then examine the relationship between local government policy and two measures of urban development at the metropolitan area level: population growth and per capita income growth.

Because I do not have a quantitative measure of government policies at the political city level, I use as a proxy a metropolitan statistical area (MSA) economic freedom index published by economist Dean Stansel in 2013.[7] The index is composed of measures of government size, level of taxation, and labor market freedom, and it is designed to capture the government impediments (or incentives) to economic activity that exist at the MSA level. So although it does not explicitly measure the actual rules and policies within MSAs, it does broadly capture the economic results of those policies. With this index, I am able to examine how MSA-level variations in how people are able to use their opportunity affect economic development.

I find that fewer government impediments, as measured by a higher score on the overall economic freedom index, are associated with more per capita income growth over a three-year

[7] Dean Stansel, "An Economic Freedom Index for US Metropolitan Areas," *Journal of Regional Analysis and Policy* 43, no. 1 (2013): 3–20.

period and a nine-year period, after controlling for other factors that affect urban development. The result is economically meaningful as well: a one standard deviation change in overall freedom is associated with an increase in average annual per capita income growth of 0.52 percentage points over the three-year period and 0.26 percentage points over the nine-year period.

To better understand the relationship between economic growth and the index, I also estimate a model where each component of the overall freedom score is entered into the regression separately. Tax freedom is positively correlated with population growth. A one standard deviation change is associated with a 2.1 percentage point increase in total population growth from 2002 to 2011 and with a 2.7 percentage point increase from 2002 to 2015. For per capita income growth, government size appears to the primary driver of the aforementioned positive relationship between annual per capita income growth and overall freedom.

In the next section, I briefly discuss the plight of declining cities and present a framework for thinking about local economic development. I then discuss some of the common approaches for generating economic development and summarize the evidence of their effectiveness. Finally, I present and discuss the empirical results that examine the relationship between government impediments, as measured by Stansel's MSA economic freedom index, and urban development.

Declining Cities and Economic Development

Many US cities have been experiencing population loss since the mid-20th century. Those cities have drawn the attention of government officials and policymakers at all levels of government. Their response has been to create numerous federal and state programs designed to reverse, or at least halt, the cities' population decline.

An indication of the extent of the decline is given in table 1, which lists 16 cities that were originally eligible for one recently created program that received federal funds, National Resource Network's "311 for Cities" service.[8] The 311 program was initially funded by a US Department of Housing and Urban Development grant and allows city officials to request and receive free assistance from experts on a variety of topics related to municipal finance and government. As table 1 makes clear, the program targets shrinking or struggling cities. The table shows each city's population in 1950 and 2013: all these cities lost population during that period.

Table 1. Selected City Populations in 1950 and 2013 with Growth Rates

City	Population		Annual growth rate needed (%)			Number of years at US rate*
	1950	2013	50 years	30 years	20 years	
Birmingham, AL	326,037	212,113	0.86	1.44	2.17	65
Buffalo, NY	580,132	258,959	1.63	2.73	4.12	122
Canton, OH	116,912	72,535	0.96	1.60	2.42	72
Cleveland, OH	914,808	390,113	1.72	2.88	4.35	130
Dayton, OH	243,872	143,355	1.07	1.79	2.69	80
Detroit, MI	1,849,568	688,701	2.00	3.35	5.06	149
Fall River, MA	111,963	88,697	0.47	0.78	1.17	35
Flint, MI	163,143	99,763	0.99	1.65	2.49	74
Gary, IN	133,911	78,450	1.08	1.80	2.71	81
Hartford, CT	177,397	125,017	0.70	1.17	1.77	53
New Haven, CT	164,443	130,660	0.46	0.77	1.16	35
Newark, NJ	438,776	278,427	0.91	1.53	2.30	69
Providence, RI	248,674	177,994	0.67	1.12	1.69	51
St. Louis, MO	856,796	318,416	2.00	3.35	5.07	150
Trenton, NJ	128,009	84,349	0.84	1.40	2.11	63
Youngstown, OH	168,330	65,184	1.92	3.21	4.86	144

* US annual growth rate from 2012 to 2043 based on census projections is 0.664 percent.

Source: Population data from US Census Bureau and projections from "2009 National Population Projections (Supplemental): Constant Net International Migration Series Tables," https://www.census.gov/data/tables/2009/demo/popproj/2009-constant-net-international-migration.html.

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[8] National Resource Network, "311 for Cities: The Network Is On Call for You," http://www.nationalresource network.org/en/311forcities. See also National Resource Network, "New Solutions for Cities," http://www .nationalresourcenetwork.org/en/home/what_we_do.

The uphill battle these cities are facing is evident in the columns showing the annual growth rates needed for each city to reach its 1950 population from its 2013 population in 50, 30, and 20 years, respectively. The last column in the table shows the number of years it would take for each city to reach its 1950 population if it grew at the same rate as the overall US population is projected to grow. For example, for Buffalo, NY, to grow from 258,959 to 580,132 people in 50 years, it would need to grow at an annual rate of 1.63 percent. If Buffalo's annual growth rate was the same as the country's rate as a whole (0.664 percent), it would take 122 years for it to reach its 1950 population. Slowing population loss in those cities may be possible, but meaningful recovery—let alone full recovery—is an incredibly arduous task.

From an economic standpoint, the decline of those cities may be optimal. The economic factors that contributed to their initial success—important shipping locations (e.g., St. Louis, Cleveland, Buffalo); hometowns of successful entrepreneurs (e.g., Dayton, Flint); proximity to larger economic centers (e.g., Gary, Newark)—no longer give these locations a competitive edge. As a result, economic activity has shifted elsewhere.

Despite the magnitude of the task and the often sound economic reasons for population decline, several national policies exist to either directly or indirectly try to revitalize declining cities, even though the efficacy of such policies is unclear. Elected officials and residents tend to dislike a shrinking city because of the financial, social, and economic problems that accompany population loss. Thus, they often seek outside assistance to help them address population decline. However, cities that want to attract firms and people are largely capable of modifying their attractiveness on their own along a variety of dimensions. I elaborate on this idea in the next section.

Dimensions of City Competition

Before further discussion, it is important to address the degree of intercity competition. In the economic literature, elected officials are modeled as behaving in several different ways: revenue maximizers,[9] vote maximizers,[10] or benevolent social planners.[11] None of these models has economic growth itself, either intensive or extensive, as the goal. Instead, economic growth will be pursued as long as it helps officials reach their goals of obtaining more revenue, more votes, or maximum improvement of their constituents' welfare. Here, I sidestep an explicit model of local officials' behavior and instead assume that, in many places, pursuing growth does, in fact, help officials accomplish any of the three aforementioned goals. To the extent that it does, the following framework is useful.

There is also evidence that intercity competition for firms and people exists and is common. For example, a 2017 article in the *Wall Street Journal* describes the competition between cities for firms, highlighting the role that tax incentives play in this competition.[12] In the article, a managing partner from a consulting group that helps firms evaluate cities' incentive offerings says that the competition between cities to attract or retain firms "is probably as competitive as it has ever been in the 30 years I have been doing this type of work." Additionally, a Google search reveals that nearly every state and local government has some sort of economic development office tasked with attracting companies through various incentives and communicating information about the local economy. The website Good Jobs

[9] Geoffrey Brennan and James M. Buchanan, "Towards a Tax Constitution for Leviathan," *Journal of Public Economics* 8, no. 3 (1977): 255–73.
[10] Anthony Downs, "An Economic Theory of Political Action in a Democracy," *Journal of Political Economy* 65, no. 2 (1957): 135–50.
[11] Richard A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill, 1959).
[12] Ruth Simon, "U.S. Cities Battle Each Other for Jobs with $45 Billion in Incentives," *Wall Street Journal*, March 16, 2017.

First tracks the incentives awarded by many of these economic development offices and has

amassed more than 330,000 entries from more than 800 state and local programs.[13]

City officials who want to generate more economic development need to attract people and

firms, often from other cities. In order to do this, city officials need to increase the attractiveness of

their city as a place to live and do business. For the purpose of analyzing how cities can attract

people and firms to increase economic development, I assume that city officials attempt to increase

their city's attractiveness—that is, economic development (Y) is a function of a city's attractiveness

(A), or $Y = F(A)$. Attractiveness is not an individual, objective metric, but rather a collection of

attributes that affect the quality of life in a particular area. A city's attractiveness (A) is a function

of several city characteristics and can be represented by equation (1):

$$A = F(T, PS, G, S, I, R, C, E), \tag{1}$$

where T = tax or fiscal policy; PS = public safety (police, fire); G = government goods (schools,

parks, festivals); S = redistribution or social safety net; I = infrastructure; R = regulatory

environment; C = climate, weather, and geographic features; and E = path-dependent

agglomeration forces. T, PS, G, S, I, and R are choice variables. C is exogenous and determined

by location, and E is exogenous in the present and determined by historical events.

Totally differentiating $A = F(\ )$ results in equation (2):

$$dF = \frac{\partial F}{\partial T}dT + \frac{\partial F}{\partial PS}dPS + \frac{\partial F}{\partial G}dG + \frac{\partial F}{\partial S}dS + \frac{\partial F}{\partial I}dI + \frac{\partial F}{\partial R}dR + \frac{\partial F}{\partial C}dC + \frac{\partial F}{\partial E}dE. \tag{2}$$

The magnitude and sign of the partial derivatives could be the same across cities (i.e., every

city's attractiveness will increase by an identical amount for a given change in that particular

attribute), or they could vary. The differential terms (dT, dPS, etc.) represent the ability of local

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[13] See the Subsidy Tracker search engine at Good Jobs First, http://www.goodjobsfirst.org/subsidy-tracker#.

government officials to change each attribute to alter their city's overall attractiveness. Table 2

provides a list of the differential terms and the government activities included in each one.

Table 2. Differential Terms for City Attributes

Differential	Description
dG	Government goods, such as parks, festivals, libraries, schools
dI	Infrastructure, such as roads, dams, bike paths, sidewalks, buildings
dPS	Public safety provision, such as police, fire, health, water
dT	Tax and fiscal policy, such as tax rates, tax structure, spending patterns
dS	Redistribution and social safety net
dR	Regulatory environment, such as business licenses, zoning, inspections
dC	Climate, weather, and geographic features
dE	Path-dependent agglomeration forces

To think about how changing these variables can alter a city's attractiveness, consider tax

policy. Tax policy is a choice variable and consists of rates and the structure of the tax code (i.e.,

what the base used for property taxes consists of; whether or not an income tax is levied and, if

so, any exemptions that exist; whether any goods or services are exempt from the local sales tax,

etc.). A given amount of taxes can be raised in several different ways, and some ways are more

efficient, equitable, and transparent than others.

Because municipal governments are creations of state governments, the level of

autonomy granted to a city varies by state. In some states, all cities are granted broad authority

over local policy, while in other states, all cities have limited authority or the authority granted

depends on the size of the city.[14] A city that has a lot of control over local policy will have a

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[14] Jesse J. Richardson, Meghan Zimmerman Gough, and Robert Puentes, "Is Home Rule the Answer? Clarifying the Influence of Dillon's Rule on Growth Management," Discussion Paper, Brookings Institution Center on Urban and Metropolitan Policy, Washington, DC, January 2003.

broader range of choices for the differential terms. Intrastate and interstate differences in levels of autonomy affect the ability of cities to compete with one another.

For example, in states where each city has a significant local control over tax policy T, dT can vary according to the discretion range shown in figure 1, where the line segment $T_0 T_d$ represents the range of possible tax policies.

Figure 1. Policy Ranges
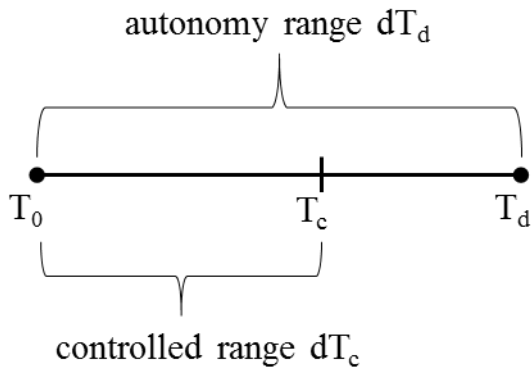
In cities that have less control, dT can vary only according to the control range or some similar range. If the local government has no control over tax policy, the maximum dT will be 0 for that city because local officials cannot change tax policy. What constitutes good tax policy is somewhat subjective, and because the details are not important in this general framework, I will not comment on the matter here. What I want to show from this analysis is (a) that there are several attributes that can alter the attractiveness of a city and (b) that the degree of local control affects the amount by which local government can alter those attributes.

In an extreme case of no local autonomy, all the differentials in equation (1) would be fixed at 0 from the city's perspective. In that case, changes in relative attractiveness would depend entirely on dC, changes in climate and geographic features, and dE, changes in path-dependent

agglomeration forces.[15] Because both of these features are fixed in the short run—and likely the long run[16]—the relative attractiveness of different cities would depend entirely on characteristics largely outside the control of present-day local officials.

Intercity Competition

Some cities, such as San Diego, Miami, and Santa Barbara, have a desirable climate, which gives them an advantage over other cities; thus, $C_{San\ Diego} > C_{Buffalo}$. In this example, San Diego can have a lower level of one or more of the other variables and still be just as attractive as another city with a less favorable climate (for example, Buffalo). If San Diego and Buffalo were equal in every category except for climate, then San Diego would still be relatively more attractive and gain population at the expense of Buffalo until a change in congestion or some other factor made the marginal person consider the two locations equally attractive. Because of its worse climate, the only way for Buffalo to attract residents from San Diego is to alter one or more of the other choice variables relative to San Diego.

As an example, if Buffalo improved its public safety (PS), then the change in its attractiveness would be the amount of the improvement, dPS, times the effect that a change in PS has on its attractiveness, which is the partial derivative of F with respect to PS. If the increase in public safety was large enough to change Buffalo's attractiveness such that it met or exceeded San Diego's, then people would migrate from San Diego to Buffalo.

If residents migrated from San Diego to Buffalo after Buffalo's change in PS, officials in San Diego might respond by changing one of their choice variables to increase their city's

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[15] Of course, city officials could still lobby state officials to change the differentials, but if doing so meant that differentials would change for every city, then it would not confer a competitive advantage to any city.
[16] Global climate change may affect dC in the long run, but because both the qualitative and quantitative effects for any particular area are uncertain, there is not much to say about it here.

attractiveness. This process of altering the various policy variables is how cities compete with one another for residents and firms. The intensity of this competition will in part depend on the discretion given to each city by its respective state.

In the model by economist Charles Tiebout, residents and firms sort themselves on the basis of their preferences for various public goods and services and externality mitigation.[17] Changes in a city's differentials will alter the relative attractiveness of that city and affect the Tiebout sorting process. In the past, transport costs were a large determinant of location choice for people and firms. But as economists Edward Glaeser and Janet Kohlhase note, "In a service economy where transport costs are small and natural productive resources nearly irrelevant, weather and government stand as the features which should increasingly determine the location of people."[18] Wharton professor Joseph Gyourko makes a similar argument in an analysis of urban development in Philadelphia.[19]

Increases in technology coupled with declining transportation costs have made it easier for firms and people to move, and the decreasing importance of place-specific natural resources has expanded the choice set of locations. Agglomeration economies driven by differences in human capital accumulation across cities may still result in industry concentration,[20] but people with high human capital—unlike rivers or coastline—can move. And because weather is largely

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[17] Charles M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64, no. 5 (1956): 416–24.

[18] Edward L. Glaeser and Janet E. Kohlhase, "Cities, Regions and the Decline of Transport Costs," *Papers in Regional Science* 83, no. 1 (2004): 197–228, 212. In a cross-county regression, the authors find that as the share of employment in agriculture, fishing, forestry, and mining—proxies for a county's natural resources—rises by 1 percent, the population growth of the county between 1920 and 2000 declines by 4.5 percent.

[19] Joseph Gyourko, Robert A. Margo, and Andrew F. Haughwout, "Looking Back to Look Forward: What Can We Learn about Urban Development from Philadelphia's 350-Year History? [with Comments]" *Brookings-Wharton Papers on Urban Affairs* (2005): 1–58.

[20] Christopher R. Berry and Edward L. Glaeser, "The Divergence of Human Capital Levels across Cities," *Papers in Regional Science* 84, no. 3 (2005): 407–44.

fixed, or at the very least is out of local officials' control, government policy is an important choice variable for local officials.

This type of intercity competition, in which cities increase or decrease the differential terms in equation (2), is constantly occurring, even if it is not always intentional on the part of local politicians or officials. The labor market equilibrium required for urban populations to stabilize in the long run does not exist indefinitely. The entrepreneurial process and technological change are constantly altering relative wages across areas, as well as the value of place-specific amenities. These changes induce people at the margin to migrate to new locations, which leads to further migration as the new arrivals change the differentials by altering the economic, political, and social environment of the city. Even if a temporary equilibrium is reached, it is only a matter of time before some aspiring economic or political entrepreneur does something that starts the process all over again. With this process in mind, cities are inevitably faced with the prospect of either growing or shrinking, especially in the long run.

The Hydraulic Approach to Urban Development

As discussed previously, city officials and policymakers in many US cities, such as the cities listed in table 1, appear to want to attract residents and firms to their cities. These cities and others have experienced significant population decline, and economist Anthony Downs identifies three fundamental approaches to counteract, slow, or at least attenuate the negative effects of city decline: structural change, city government reform, and community development.[21]

Structural change involves creating either (a) a metropolitan-level government that has the power to coordinate land use and transportation policy, limit urban sprawl, and redistribute

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[21] Anthony Downs, "The Challenge of Our Declining Big Cities," *Housing Policy Debate* 8, no. 2 (1997): 359–408.

resources within the area or (b) a coalition of state senators and representatives that can pass state-level laws that mimic many of the functions of a metropolitan government. City government reform focuses on reforming city bureaucracies as well as policies and regulations that hinder the attraction and retention of firms and residents. Finally, the community development approach emphasizes the central location and untapped potential of central cities as benefits and encourages residents and local officials to highlight those assets. Many advocates of this approach also encourage federal and state-level grants and investment to accelerate the process of urban revitalization.

Broadly speaking, the community development approach seems to be the most common approach in the United States. One example of the community development approach is the Community Development Block Grant (CDBG) Program, which is the largest source of federal funds for urban improvement initiatives.[22] Despite its longevity, relatively few studies have examined the effectiveness of the CDBG program. The lack of informative evaluation of CDBG projects is not unrecognized by officials of the US Department of Housing and Urban Development (HUD). Raphael Bostic, assistant secretary of the Office of Policy Development and Research for HUD from 2009 to 2012, has stated, "For a program with the longevity of the CDBG, remarkably few evaluations have been conducted, so relatively little is known about what works."[23]

Two related reasons for the limited evaluation are the lack of data and the high cost of obtaining what data are available. For example, economists Leah Brooks and Maxim Sinitsyn had to submit a Freedom of Information Act request to obtain the data necessary for their

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[22] William M. Rohe and George C. Galster, "The Community Development Block Grant Program Turns 40: Proposals for Program Expansion and Reform," *Housing Policy Debate* 24, no. 1 (2014): 3–13.
[23] Raphael W. Bostic, "CDBG at 40: Opportunities and Obstacles," *Housing Policy Debate* 24, no. 1 (2014): 297–302.

study.[24] Furthermore, after obtaining the data, they had to expend significant time and effort to manipulate the data into a usable format because they "received data in multiple different tables that required linking with little documentation." The few studies that have examined the CDBG Program provide inconclusive evidence regarding its efficacy.[25]

The community development approach, of which the CDBG Program is an example, encourages investment in physical projects, such as schools, infrastructure, and business districts, with the hope that such investment will spark broader economic vitality. Often, however, the projects fall short, both in the United States (e.g., CDBG Program) and abroad. For example, a 2017 study examines a large urban renewal project in Berlin, Germany, designed to improve the housing stock in economically depressed areas of the city after German reunification. The study's authors find that while building quality slightly improved, there were no larger development effects and that the program was primarily a cash transfer to participating landlords.[26]

The economic model behind this approach is similar to the Harrod-Domar model of economic growth, which dominated the landscape of international economic development for decades. That model emphasizes savings and the role of capital investment in the creation of viable economic development and produces what Deaton, as noted earlier, calls the hydraulic approach to economic development: if money flows in at one end, development will flow out the other. The hydraulic approach portrays economic development as a plumbing or an engineering

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[24] Leah Brooks and Maxim Sinitsyn, "Where Does the Bucket Leak? Sending Money to the Poor via the Community Development Block Grant Program," *Housing Policy Debate* 24, no. 1 (2014): 119–71.

[25] George Galster, Peter Tatian, and Kathryn Pettit, "Supportive Housing and Neighborhood Property Value Externalities," *Land Economics* 80, no. 1 (2004): 33–54. See also Eileen Norcross, "The Community Development Block Grant: Does It Work?" (Mercatus Policy Series 5, Mercatus Center at George Mason University, Arlington, VA, November 2007), 1–23.

[26] Gabriel M. Ahlfeldt, Wolfgang Maennig, and Felix J. Richter, "Urban Renewal after the Berlin Wall: A Place-Based Policy Evaluation," *Journal of Economic Geography* 17 (2017): 129–56.

problem. The basic idea is that certain tangible things are needed for a country to be successful, the cost of these things can be summed, the money can be procured, and the projects can be completed for the specified cost; in short, money in means projects out. Once the projects are complete, robust economic development will occur. The criteria used to judge success are dollars spent and projects completed.

After decades of direct foreign aid in the spirit of the hydraulic approach, it became obvious to most observers that money alone would not lead to robust economic development in foreign countries.[27] In the 1980s and 1990s new institutional economics started changing the way economists and policymakers thought about economic development, placing a heavier emphasis on institutions or "the rules of the game." The research of Douglass North, Oliver Williamson, William Easterly, and other new institutional economists emphasized that if a country's institutions and economic policies created the wrong incentives, then no amount of investment would generate economic development.[28]

When it comes to urban redevelopment in the United States, the hydraulic approach is still the primary framework. In terms of the differentials in table 2, US urban development policies target dG, dI, and to a lesser extent dPS. The idea is that successful cities have certain things—nice parks, river walks, sports teams, good schools, good jobs, and walkable neighborhoods—and that duplicating those things in downtrodden cities will reverse population loss and remove urban blight. This approach overlooks the more underlying policy factors captured in the other differentials—dT, dR, and dS—that also affect a city's attractiveness. People will not reside in a city that has nice parks or sports teams if the tax code used to acquire

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[27] William Easterly, "Can Foreign Aid Buy Growth?," *The Journal of Economic Perspectives* 17, no. 3 (2003): 23–48.
[28] For examples, see Douglass C. North, *Institutions, Institutional Change and Economic Performance* (New York: Cambridge University Press, 1990); Oliver E. Williamson, "The New Institutional Economics: Taking Stock, Looking Ahead," *Journal of Economic Literature* 38, no. 3 (2000): 595–613.

such amenities is excessively inefficient or confiscatory. Similarly, no matter how nice an office park is, entrepreneurs cannot create new products, services, and the accompanying jobs if the regulatory structure is confusing and overly burdensome.

Variants of the Hydraulic Approach

In addition to development grants such as CDBGs, cities also try to attract businesses and individuals through various incentive programs and contests. Economic incentive programs largely change the dT (tax) differential but not in a way that creates more efficient tax policy. Instead tax policy is altered through company-specific tax abatements, exclusions, rates, and credits, often referred to as *tax expenditures*, which create distortions in the local economy and undermine the local rules of the game.

There is also little evidence that such incentive programs increase employment or generate economic development more broadly. Several studies find no effect on actual investment or employment growth, and some even find a negative effect.[29] Even in studies that find a positive effect, it is usually quite small.[30] Benjamin Clark concludes that there is little evidence that tax expenditure programs in Ohio—home of several declining cities—have resulted in any meaningful economic development.[31] In an overview of the state tax incentives

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[29] See William F. Fox and Matthew N. Murray, "Do Economic Effects Justify the Use of Fiscal Incentives?," *Southern Economic Journal* 71, no. 1 (2004): 78–92; Alan Peters and Peter Fisher, "The Failures of Economic Development Incentives," *Journal of the American Planning Association* 70, no. 1 (2004): 27–37; Michael D. LaFaive and Michael J. Hicks, *MEGA: A Retrospective Assessment* (Midland, MI: Mackinac Center for Public Policy, April 2005); Todd M. Gabe and David S. Kraybill, "The Effect of State Economic Development Incentives on Employment Growth of Establishments," *Journal of Regional Science* 42, no. 4 (2002): 703–30.

[30] Dagney Faulk, "Do State Economic Development Incentives Create Jobs? An Analysis of State Employment Tax Credits," *National Tax Journal* 55, no. 2 (2002): 263–80.

[31] Benjamin Y. Clark, "Can Tax Expenditures Stimulate Growth in Rust Belt Cities?" in *The Road Through the Rust Belt: From Preeminence to Decline to Prosperity*, ed. William M. Bowen (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2015), 37–68.

literature, Terry Buss notes that many studies yield conflicting results and thus provide little guidance to policymakers about what programs or incentives, if any, actually work.[32]

Research scientists Mercedes Delgado and Kimberly Zeuli find that the strength of intraregional links between inner-city, central-city, and suburban economic clusters positively affect inner-city employment growth.[33] Generic place-based policies such as empowerment zones that seek to attract any firm and neglect the importance of such clusters are unlikely to succeed because they fail to leverage the competitive advantages already present in a region. Political attempts to attract certain industries that are a poor fit for an area can create distortions in the local economy that crowd out firms in industries more suited for the region, as well as interfere with the organic creation of new businesses.[34]

There is also evidence that the use of empowerment zones or tax increment financing (TIF) simply reallocates economic activity from one area of a city or metro area to another, rather than increasing overall output.[35] So while the public tax subsidies may make the neighborhoods and districts included in the programs relatively more attractive, they do not appear to contribute to a thriving economy overall.[36] This finding is not surprising given the targeted nature of the programs and the accompanying lack of citywide policy reform.

Other examples of cities trying to increase their attractiveness include changing dG (government goods), perhaps by publicly funding a convention center, stadium, or arena. Again,

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[32] Terry F. Buss, "The Effect of State Tax Incentives on Economic Growth and Firm Location Decisions: An Overview of the Literature," *Economic Development Quarterly* 15, no. 1 (2001): 90–105.

[33] Mercedes Delgado and Kimberly Zeuli, "Clusters and Regional Performance: Implications for Inner Cities," *Economic Development Quarterly* 30, no. 2 (2016): 117–36.

[34] Pierre Desrochers and Frédéric Sautet, "Cluster-Based Economic Strategy, Facilitation Policy and the Market Process," *Review of Austrian Economics* 17, nos. 2–3 (2004): 233–45.

[35] Richard F. Dye and David F. Merriman, "The Effects of Tax Increment Financing on Economic Development," *Journal of Urban Economics* 47, no. 2 (2000): 306–28.

[36] T. William Lester, "Does Chicago's Tax Increment Financing (TIF) Programme Pass the 'But-for' Test? Job Creation and Economic Development Impacts Using Time-Series Data," *Urban Studies* 51, no. 4 (2014): 655–74.

there is little evidence that such projects generate sustainable economic development. A 1990 study finds a possible negative impact on local economic development from the subsidization of sports stadiums.[37] In a summary of the relevant research, a 2000 study finds "virtually no evidence of economic development benefits from sports teams or stadiums."[38] A 2015 study updates a 1999 study and finds that sports teams may actually hurt economic growth.[39]

The common thread that runs through the development strategies just discussed is that they ignore, or at least downplay, the knowledge problem: public officials and planners have no way of obtaining or analyzing all the dispersed information necessary for effectively selecting the businesses or projects that will generate sustainable economic growth. Instead of expending resources procuring intergovernmental grants, subsidizing sports stadiums, or providing firm-specific tax expenditures, city officials could unlock the entrepreneurship that is present in their cities by reforming their local policies and rules. As economists Peter Boettke and Christopher Coyne argue, entrepreneurship itself is not the cause of economic development; everyone is an entrepreneur, and entrepreneurship is omnipresent.[40] The key to economic growth is unlocking the productive, rather than unproductive, entrepreneurship that already exists in a particular area. Doing so means creating rules of the game that nurture productive entrepreneurship and the creation of new ideas.

[37] Robert A. Baade and Richard F. Dye, "The Impact of Stadium and Professional Sports on Metropolitan Area Development," *Growth and Change* 21, no. 2 (1990): 1–14.

[38] John Siegfried and Andrew Zimbalist, "The Economics of Sports Facilities and Their Communities," *Journal of Economic Perspectives* 14, no. 3 (2000): 95–114.

[39] Dennis Coates, "Growth Effects of Sports Franchises, Stadiums, and Arenas: 15 Years Later" (Mercatus Working Paper, Mercatus Center at George Mason University, September 2015).

[40] Peter J. Boettke and Christopher J. Coyne, "Entrepreneurship and Development: Cause or Consequence?," *Advances in Austrian Economics* 6 (2003): 67–87.

At the country level, economic freedom is associated with a variety of positive economic outcomes such as faster growth and better living standards.[41] When countries are examined, it is apparent that many areas of the world stifle entrepreneurship with some combination of corruption, cronyism, burdensome regulation, and confiscatory taxation. But international differences in economic freedom cannot explain intranational differences in economic outcomes. In the United States, which has relatively good country-level rules and institutions and a high degree of economic freedom, there are substantial differences in economic development both across and within states.[42] Because intranational differences cannot be explained completely by state- or country-level rules and institutions, it is worthwhile to examine whether local rules, institutions, and economic freedom more broadly can help explain the variation in MSA economic outcomes.

The idea that local rules and institutions can affect city and regional growth is not new. As mentioned previously, Porter notes that regulatory barriers and red tape could prevent private investment in declining inner cities.[43] Porter argues that creating a favorable environment for business (i.e., altering policies and rules) can help generate economic development within cities.

The generation of regional clusters also depends on local regulations. Economics professor Arne Isaksen emphasizes the importance of existing knowledge and entrepreneurs in an area.[44] He also notes that "existing knowledge may become relevant and initiate new clusters in the wake of altered rules of the game." Later he says that "new clusters can arise in places in

[41] Joshua C. Hall and Robert A. Lawson, "Economic Freedom of the World: An Accounting of the Literature," *Contemporary Economic Policy* 32, no. 1 (2014): 1–19.
[42] James Gwartney, Robert Lawson, and Joshua Hall, "2015 Economic Freedom Dataset," in *Economic Freedom of the World: 2015 Annual Report* (Vancouver, BC: Fraser Institute 2015), https://www.fraserinstitute.org/sites/default /files/economic-freedom-of-the-world-2015.pdf.
[43] Porter, "New Strategies for Inner-City Economic Development."
[44] Arne Isaksen, "Cluster Emergence: Combining Pre-existing Conditions and Triggering Factors," *Entrepreneurship and Regional Development* 28, nos. 9–10 (2016): 1–20.

which actors with relevant synthetic and/or analytical knowledge are able to develop or exploit new technological knowledge, *new regulations*, etc. to commercial ends" (my italics).

Local rules and regulations in combination with state and federal rules can unlock entrepreneurship, but different rules will lead to different types of entrepreneurial activity. Economist W. J. Baumol notes that Joseph Schumpeter's list of entrepreneurial activity is incomplete and that, in addition to productive activities such as the introduction of a new good, a new method of production, or the opening of a new market, entrepreneurs could also allocate their time and energy to pursuing innovations in rent-seeking, which Baumol describes as unproductive entrepreneurship.[45] Baumol argues that better rules and institutions will promote productive entrepreneurship. Economics professor Russell Sobel tests Baumol's hypothesis and presents state-level evidence that higher-quality institutions positively affect productive entrepreneurship.[46]

If the rules increase the payoff of unproductive entrepreneurship relative to productive entrepreneurship, people will devote more of their abilities and resources to the former. If the rules change such that the relative payoff of productive entrepreneurship increases, then some people will switch from unproductive to productive entrepreneurship. Not only will some people switch between the two types of entrepreneurship, but—as Baumol points out—some people who were not particularly suited for unproductive entrepreneurship and were sitting on the sidelines may become first-time (productive) entrepreneurs in response to the change in relative payoffs.

Baumol's analysis largely ignores migration because it focuses on country-level institutions, and international migration is relatively difficult. But within a country such as the

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[45] W. J. Baumol, "Entrepreneurship: Productive, Unproductive, and Destructive," *Journal of Political Economy* 98, no. 5 (1990): 893–921. See also Joseph A. Schumpeter, *The Theory of Economic Development* (Leipzig, Germany: Duncker and Humblot, 1912), English edition (Cambridge, MA: Harvard University Press, 1934).
[46] Russell S. Sobel, "Testing Baumol: Institutional Quality and the Productivity of Entrepreneurship," *Journal of Business Venturing* 23, no. 6 (2008): 641–55.

United States, where people are relatively mobile, if the local rules of the game are tilted toward unproductive entrepreneurial activity in one area, entrepreneurs in that area whose talents are better suited for productive entrepreneurship can migrate to a different area that allows them to better use their abilities. Hence, within a country such as the United States, productive entrepreneurs do not have to wait for the rules to change in their favor—a process that may take a long time—before engaging in entrepreneurial activity. Instead they can move to an area that fosters productive entrepreneurship. For example, a 2015 study finds evidence that local government quality positively affects migration at the regional level in Europe.[47]

A US example is Detroit. Many point to the decline of the American automobile industry as a significant factor in Detroit's decades-long decline. And although that was certainly part of it, Detroit also had a corrupt government that routinely doled out favors to well-connected firms and obstructed the projects of others.[48] This type of political and business climate and the unproductive entrepreneurship it fostered also contributed to the city's decline.

Because all industries are eventually challenged by new competitors, the relevant question for understanding sustained development is how local economies deal with such challenges and, as noted both here and by Storper,[49] research on international development that examines the role of institutions and policies offers some guidance. Variations in institutions and policies across cities can lead to variations in growth and development because different policies

[47] Tobias D. Ketterer and Andrés Rodríguez-Pose, "Local Quality of Government and Voting with One's Feet," *Annals of Regional Science* 55, nos. 2–3 (2015): 501–32.

[48] For examples, see Tresa Baldas, "How Corruption Deepened Detroit's Crisis," *Detroit Free Press*, October 6, 2013, http://www.usatoday.com/story/news/nation/2013/10/06/how-corruption-deepened-detroits-crisis/2929137/; Sarah Cwiek, "(The Latest) Corruption Charges in Detroit's Struggling Schools," NPR, April 22, 2016, http://www.npr.org/sections/ed/2016/04/22/474737468/-the-latest-corruption-charges-in-detroits-struggling-schools; Todd Zywicki, "Bankrupt: How Cronyism and Corruption Brought Down Detroit," *Washington Post*, February 10, 2014, https://www.washingtonpost.com/news/volokh-conspiracy/wp/2014/02/10/bankrupt-how-cronyism-and-corruption-brought-down-detroit/?utm_term=.ab747b72adb4.

[49] Michael Storper, "Why Do Regions Develop and Change? The Challenge for Geography and Economics," *Journal of Economic Geography* 11, no. 2 (2010): 333–46.

have different effects on local economies' ability to adapt to change. Local areas that implement or maintain policies that make it easier for entrepreneurs to generate new activities to replace the old should have more resilient economies and better economic outcomes than do similar areas that make such adaptation and innovation more difficult.

Empirical Evidence

In this section, I present empirical evidence that government impediments to economic activity matter at the local level. I use an index of MSA economic freedom from Stansel. This index consists of three measures of economic freedom—labor market freedom, taxation freedom, and size of government—which are then aggregated at the MSA level to form an overall freedom index. This index is modeled after the 2008 edition of *Economic Freedom of North America.*[50] The following analysis is similar to the study by economist Jamie Bologna and coauthors.[51] That study also uses the MSA economic freedom index and its components as explanatory variables along with several other controls. However, the only dependent variable used in that study is per capita income growth, which means that the study examines only the relationship between local rules and policies and intensive urban development.

A significant contribution of that paper is that Bologna and coauthors test for spatial dependence between per capita income and economic freedom and find some evidence that such dependence exists. They use spatial econometric techniques to account for this dependence. They also use ordinary least squares and report the correlations, which is what I do here. The correlations themselves are still interesting. Examining extensive growth (more economic output

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[50] Amela Karabegović and Fred McMahon, *Economic Freedom of North America: 2008 Annual Report* (Vancouver, BC: Fraser Institute, 2008).

[51] Jamie Bologna, Andrew T. Young, and Donald J. Lacombe, "A Spatial Analysis of Incomes and Institutional Quality: Evidence from US Metropolitan Areas," *Journal of Institutional Economics* 12, no. 1 (2016): 191–216.

that manifests as more people) in addition to intensive growth (more economic output that manifests as more income per person) is important at the local level because intensive growth may understate the economic vitality of an MSA since it doesn't account for population changes, which are also an important measure of urban development.

MSAs are not controlled by one government, so the empirical results here do not perfectly align with the analysis and discussion presented earlier. That said, the point of this empirical section is to analyze the effect of government impediments on economic activity at a more local level than previous work that uses states or countries as the unit of analysis. Extrapolating the results of this analysis to political cities should be done with caution, but the analysis itself is a step toward a better understanding of the effect that local impediments have on local economic activity.

A motivation for the regression analysis is illustrated in figure 2, which shows the relationship between overall economic freedom and two measures of urban development: total population growth and annual per capita income growth, both from 2002 to 2011. The sample size is 381 and is the same sample as in the study by Bologna and coauthors. It is also the sample I use in the primary regression analysis to follow. In these two figures, the MSA overall freedom score is the only control variable, and the standard errors are clustered by state.

The outcomes are the annual average percentage change in per capita income growth (figure 2, panel A) and the change in population growth (figure 2, panel B). As shown in the figures, only population growth is positively correlated with the overall economic freedom when no other controls are included and overall freedom is statistically significant at the 10 percent level. In the multivariable regression analysis that follows, I use this index and its components as my primary measures of local economic policy. I also use several other control variables to

examine whether the relationships shown in these figures hold once other factors that can affect

urban development are included.

Figure 2. Relationship between Economic Freedom and Two Measures of Urban Development in 381 Cities

A. Economic Freedom and Per Capita Income Growth, 2002–2011

B. Economic Freedom and Population Growth, 2002–2011

coef = .02452728, (robust) se = .01252359, t = 1.96
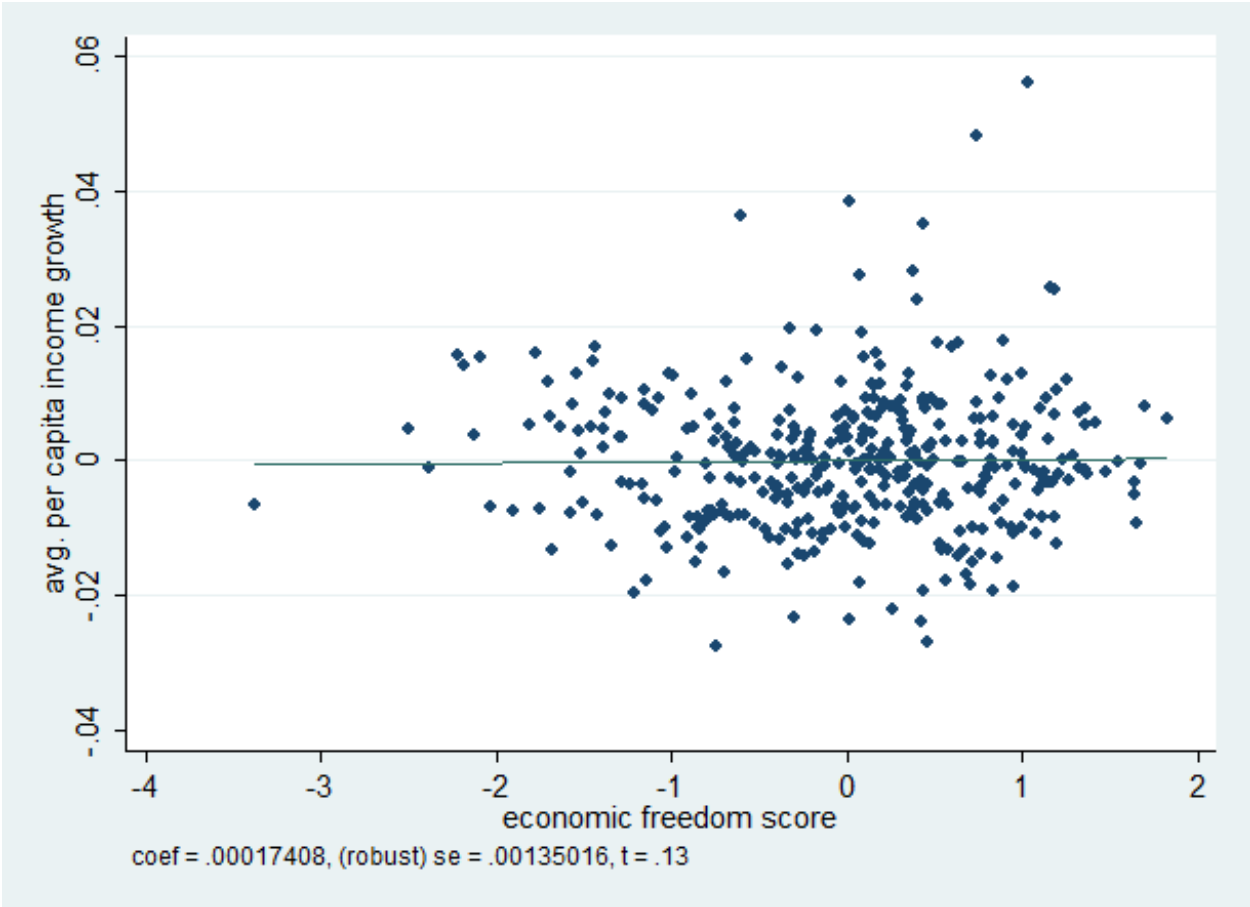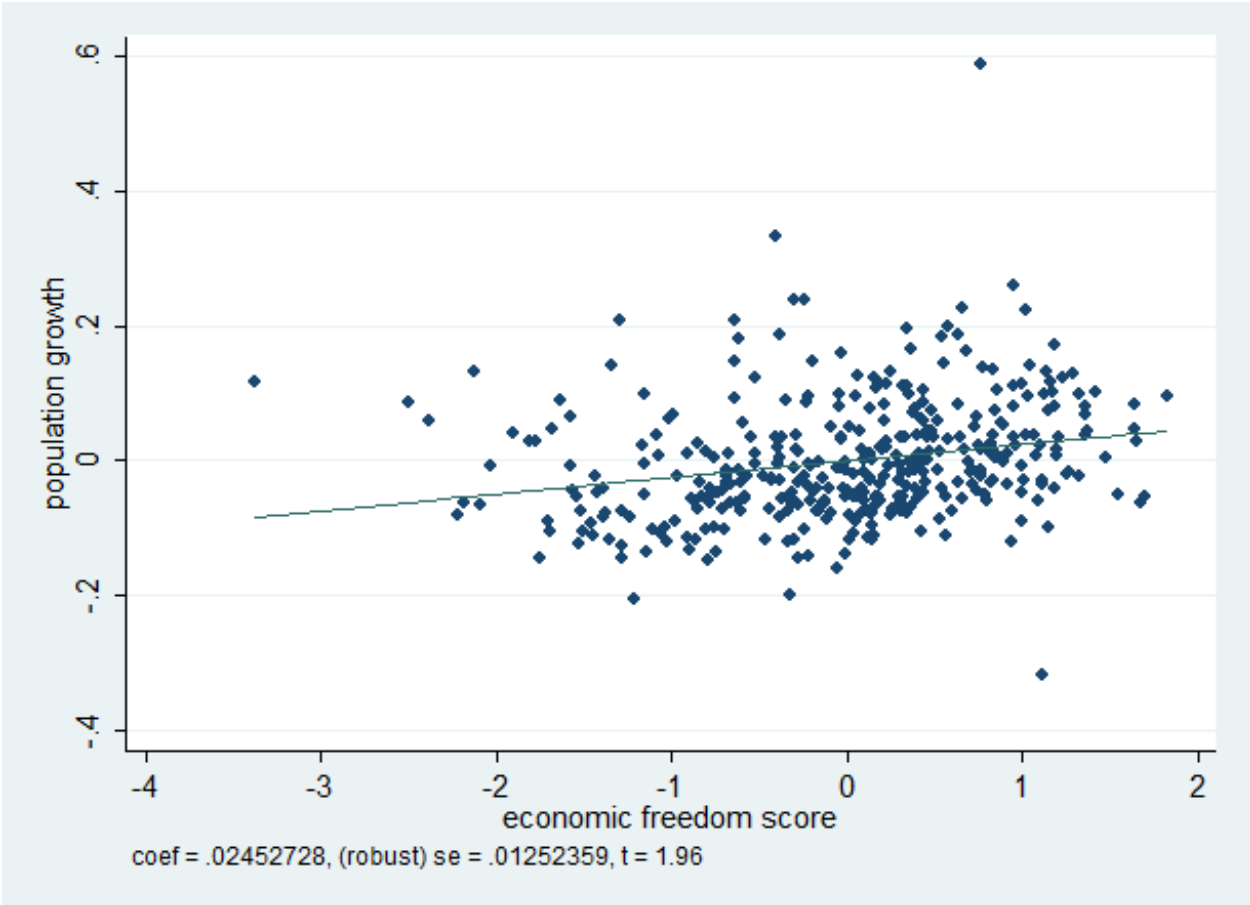
Source: The economic freedom scores are from Dean Stansel, "An Economic Freedom Index for US Metropolitan Areas," *Journal of Regional Analysis and Policy* 43, no. 1 (2013): 3–20.

The three major components of the index and their subcomponents are listed in table 3.

Table 3. Metropolitan Statistical Area Economic Freedom Index Components

Area	Description
Size of government	General consumption expenditures by government as a percentage of personal income
	Transfers and subsidies as a percentage of personal income
	Social security payments as a percentage of personal income
Takings and discriminatory taxation	Total tax revenue as a percentage of personal income
	Total individual income tax revenue as a percentage of personal income
	Indirect tax revenue as a percentage of personal income
	Sales tax collected as percentage of personal income
Labor market freedom	Minimum wage annual income as a percentage of MSA per capital personal income
	State and local government employment as a percentage of total employment
	State union density

Note: For more details about the index see Dean Stansel, "An Economic Freedom Index for US Metropolitan Areas," *Journal of Regional Analysis and Policy* 43, no. 1 (2013): 3–20.

The measures of economic freedom were constructed using 2002 data and range from 0 (least free) to 10 (most free). There is wide dispersion between the values as shown in the summary statistics in table 4. Although these measures of economic freedom are not identical to measures of rules (such as tax rates, business license requirements, or minimum wage laws) or institutions (such as the security of property rights or an impartial judicial system), they do provide a proxy for the role of government in the local economy. For example, the labor market freedom index measures how binding the minimum wage is in an MSA, the intensity of unionization, and the proportion of total employment in government. Because these variables provide a measure of the government's use of labor resources and the freedom to contract with employers across MSAs, they can serve as a proxy for the rules governing the labor market.

Other components of the index, such as taxes as a proportion of income and government expenditures as a percentage of personal income, provide a measure of the economic results of policies (e.g., the proportion of resources removed from the private sector and spent on government goods and services). That is, even though such components do not directly measure government policy, they do measure the allocation of productive resources between the government and the private sector that results from policy.

The model I estimate in equation (3) is

$$y_i = \alpha + \beta econ.freedom_i + \theta X_i + \mu(state\ FE) + \varepsilon, \tag{3}$$

where X is a vector of control variables that may also affect urban development. The outcomes I am interested in are population growth and per capita income growth. To capture any unobserved factors that vary geographically, I include state fixed effects, and ε is an error term with the usual properties.

A complete list of the control variables and their descriptions is available in the appendix, but I briefly discuss them here. The control variables are from the US Census Bureau and the US Bureau of Economic Analysis (BEA). They are the same controls used by Bologna and coauthors with one exception: I added the average January temperature of each MSA because climate has been shown to affect population growth and wages.[52] MSAs are based on commuting patterns and thus may change over time. The dependent and independent variables used in this study are based on the 2009 MSA definitions from Office of Management and Budget (OMB).[53]

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[52] Edward L. Glaeser, Jed Kolko, and Albert Saiz, "Consumer City," *Journal of Economic Geography* 1, no. 1 (2001): 27–50. See also Dan S. Rickman and Hongbo Wang, "US Regional Population Growth 2000–2010: Natural Amenities or Urban Agglomeration?," *Papers in Regional Science* 96 (2017): S69–90.

[53] OMB Bulletin no. 10-02, December 1, 2009, https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/bulletins/b10-02.pdf.

These control variables were chosen because the literature shows that they can affect urban growth and development. The controls primarily consist of year 2000 data to mitigate endogeneity concerns between the control variables and the dependent variables. Because I use population and per capita income growth from 2002 onward as my dependent variable, the use of data from 2000 reduces concerns of reverse causation.

Per capita income in 2002 and the percentage of people in poverty in 1999 are used to capture the initial economic conditions of the MSA. Population and population density provide a proxy for the degree of economic specialization within an area and the ease of knowledge spillovers, respectively. Research shows that city-level productivity, and thus wages, tend to increase with population size as well.[54] Population and population density can broadly capture the presence and scale of agglomeration economies.

A bevy of employment controls are used to control for the initial industrial and labor market composition of the MSA. The percentage of an MSA's residents who are teens, of working age, or over 65, along with the percentage of residents who are black or Hispanic, control for an area's demographics.

Average January temperature is used as a control because it is an important climate amenity that is associated with population growth and productivity. The number of square meters of water per person is also included as a control to capture the availability of waterfront real estate and water-associated amenities.

The percentage of people in an MSA with a bachelor's degree or higher is included as a control variable, along with the percentage of people with a high school diploma and percentage

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[54] Rudiger Ahrend, Emily Farchy, Ioannis Kaplanis, and Alexander C. Lembcke, "What Makes Cities More Productive? Evidence from Five OECD Countries on the Role of Urban Governance," *Journal of Regional Science* 57, no. 3 (2017): 385–410.

with some college. An area's level of human capital is strongly correlated with population growth and with economic development more broadly, especially in the long run.[55]

The model specification in equation (2) allows for the two dependent variables, per capita income growth and population growth, to depend on the initial economic conditions of the MSA, the MSA's industrial composition, the MSA's demographics, the MSA's geographic and climate amenities, and the MSA's level of human capital, along with the economic freedom variables. Summary statistics for all the control and dependent variables are in table 4.

The dependent variables are population growth and average annual per capita income growth over a variety of time periods and are created from data in the BEA's Local Area database. I also briefly examine the relationship between economic freedom and wages in levels by using the natural log of per capita income in 2011 as the dependent variable.

Population and income growth are widely used measures of economic development. The first is a measure of extensive growth, and the second is a measure of intensive growth. Using both provides a more holistic view of the economic success of an area.[56] Additionally, using only per capita income growth as a dependent variable can be problematic at the local level because of the relative ease of interstate and inter-MSA migration, which tends to equilibrate per capita incomes over time. Thus, there could be population growth in an MSA without any per capita income growth, and the former is evidence of a thriving urban area.

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[55] See Curtis J. Simon, "Human Capital and Metropolitan Employment Growth," *Journal of Urban Economics* 43, no. 2 (1998): 223–43; Curtis J. Simon and Clark Nardinelli, "The Talk of the Town: Human Capital, Information, and the Growth of English Cities, 1861 to 1961," *Explorations in Economic History* 33, no. 3 (1996): 384–413; Curtis J. Simon and Clark Nardinelli, "Human Capital and the Rise of American Cities, 1900–1990," *Regional Science and Urban Economics* 32, no. 1 (2002): 59–96; Edward L. Glaeser, Albert Saiz, Gary Burtless, and William C. Strange, "The Rise of the Skilled City [with Comments]," *Brookings-Wharton Papers on Urban Affairs* (2004): 47–105.
[56] Mark D. Partridge and Dan S. Rickman, "Do We Know Economic Development When We See It?," *Review of Regional Studies* 33, no. 1 (2003): 17–39.

Table 4. Summary Statistics (*N* = 381)

Variable	Mean	Standard deviation	Minimum	Maximum
Dependent variables				
Ln per capita income, 2011	10.18	0.23	9.47	11.05
Average change in per capita income (%)				
2002–2005	0.9	1.5	−3.3	7.0
2002–2011	0.2	1.0	−3.0	6.0
Population growth (%)				
2002–2005	3.0	4.0	−27.0	33.0
2002–2011	9.0	9.0	−22.0	68.0
2002–2015	13.0	12.0	−21.0	82.0
Economic freedom controls, 2002				
Overall freedom	6.7	0.86	3.3	8.5
Size of government	7.5	1.14	2.7	9.5
Tax freedom	6.1	0.83	2.8	8.2
Labor market freedom	6.5	1.20	1.6	9.1
Economic controls, 2000				
Population, 2002	623,837	1,111,244	54,503	11,399,982
Per capita income, 2002 ($)	26,559	6,280	12,130	59,901
Employment sectors (%)				
Federal	0.9	1.0	0.2	10.9
Agriculture, forestry, and fishing	1.2	1.2	0.1	8.1
Construction	4.1	0.8	1.8	7.1
Manufacturing	8.7	4.5	1.6	28.7
Wholesale trade	2.0	0.6	0.6	4.3
Retail trade	7.2	0.9	4.2	11.2
Transportation and warehousing	2.8	0.8	1.2	6.8
Information	1.5	0.6	0.4	4.4
Finance	3.5	1.4	1.2	13.9
Professional and scientific	4.6	1.7	1.9	12.3
Education and health	12.4	2.8	7.0	27.7
Arts and entertainment	4.8	1.6	2.3	18.7
Other services	2.8	0.4	1.9	4.5
Self-employment	3.8	0.9	1.9	8.0
Education controls, 2000				
High school graduate (%)	30.1	6.0	15.1	49.9
Some college (%)	28.4	4.5	16.6	40.1
Bachelor's degree or higher (%)	22.8	7.5	9.9	52.4
Demographic controls, 2000				
Age 15–19 (%)	7.6	1.1	4.4	12.8
Age 20–64 (%)	58.4	2.6	47.2	66.1
Age 65 or older (%)	12.7	3.5	4.2	34.6
Black (%)	10.4	10.7	0.2	48.7
Hispanic (%)	9.4	14.1	0.5	93.6
Below poverty level (%)	12.5	4.3	4.5	35.9

Variable	Mean	Standard deviation	Minimum	Maximum
Geography and climate controls, 2000				
Persons per square mile of land	332.1	543.0	6.5	7121.5
Square meters of water per person	1.2	2.5	0.0	17.4
Average January temperature (°F)	35.4	12.6	5.3	68.1

Results

Table 5 displays the results from regressing the per capita income dependent variables on overall economic freedom, the controls in table 4, and state fixed effects. The dependent variable is listed at the top of each column. For the sake of brevity, I report only the coefficients for the controls I believe the reader will find most interesting on the basis of previous literature.

Table 5. Economic Freedom and Per Capita Income: Regression Results

Independent variables	1 Annual per capita income growth, 2002–2005	2 Annual per capita income growth, 2002–2011	3 Ln per capita income, 2011
Overall freedom	0.006***	0.003**	0.117***
	0.002	0.001	0.026
Population, 2002	1.3E-09**	8.5E-10*	1.8E-08***
	6.1E-10	4.5E-10	6.7E-09
Per capita income, 2002	3.1E-07	2.3E-07	—
	3.6E-07	2.9E-07	—
Percentage of employment, construction	−0.001	−0.002*	0.008
	0.002	0.001	0.017
Percentage of employment, manufacturing	−0.001**	−0.001***	−0.003
	4.3E-04	3.1E-04	0.004
Percentage of employment, retail trade	−0.001	−0.001	−0.006
	0.001	0.001	0.008
Percentage of self-employment	0.004**	0.001	−0.009
	0.001	0.001	0.015
Percentage of bachelor's degree or higher	0.001**	3.9E-04	0.015***
	3.3E-04	2.6E-04	0.004

continued on next page

Independent variables	1 Annual per capita income growth, 2002–2005	2 Annual per capita income growth, 2002–2011	3 Ln per capita income, 2011
Percentage age 20–64	−0.001**	2.0E-04	0.005
	4.7E-04	3.7E-04	0.005
Persons per square mile of land	1.66E-06	7.45E-07	3.0E-05***
	1.3E-06	8.2E-07	8.2E-06
Square meters of water per person	3.9E-05	3.7E-04**	0.006**
	2.8E-04	1.6E-04	0.002
Average January temperature	2.7E-04*	1.1E-04	0.002
	1.5E-04	8.8E-05	0.002
Constant	0.013	−0.059	8.73***
	0.066	0.043	0.680
State fixed effects	YES	YES	YES
N	381	381	381
R^2	0.664	0.697	0.886

*10%, **5%, and ***1% significance levels.

Note: Standard errors clustered by state, 49 clusters. Regressions also include the other controls listed in table 4 and described in the appendix.

In column 1, overall economic freedom is positively associated with per capita income annual growth from 2002 to 2005 and is significant at the 1 percent level. Column 2 shows that this relationship persists over a longer period, from 2002 to 2011, though the magnitude of the coefficient declines. A one standard deviation change in overall freedom is associated with a 0.52 percentage point change in average annual per capita income growth from 2002 to 2005 and a 0.26 percentage point change from 2002 to 2011, which is approximately one-third and one-fourth of the standard deviation of those annual growth rates, respectively.

Column 3 reports the results from a regression that uses the level of per capita income in 2011 as the dependent variable. Again, overall freedom is positively associated with per capita income and the result is significant at the 1 percent level. A one standard deviation change is associated with a 0.10 log point increase, which evaluated at the mean is an economically relevant increase in per capita income from $26,370 to $29,143.

The other variables are largely consistent with the literature. Population and population density are positively correlated with per capita income in column 3 and population is positively correlated with per capita income growth in columns 1 and 2, though the relationship is smaller and weaker from 2002 to 2011. The percentage of residents with a bachelor's degree or higher is also positively correlated with short-term per capita income growth and per capita income in 2011. Average January temperature is positive and significant at the 10 percent level in column 1, but the relationship loses significance in the other columns. Square meters of water per person, however, is positively correlated with both annual per capita income growth from 2002 to 2011 and per capita income in 2011. This correlation could be due to high-productivity people locating in areas with more water per person or firms locating in such areas, which then attract high-productivity workers.

Table 6 shows each component of the overall economic freedom score as a separate control. It thus demonstrates how each component affects per capita income and annual growth. For the sake of brevity, I display only the coefficients for the economic freedom components. The other coefficients are similar to those in table 5, which is expected because the overall economic freedom score is an average of the components.

Of the three components shown in table 6, government size has the strongest relationship with annual per capita income growth. As government size decreases (larger index value) across MSAs, per capita income growth increases. Over both periods (columns 1 and 2) the government size score is positively correlated with per capita income growth and significant at the 1 percent level. Government size is also positively correlated with ln per capita income in 2011, but the relationship is not significant. In terms of levels, labor market

freedom has the strongest positive relationship with per capita income in 2011, as shown in column 3.[57]

Table 6. Economic Freedom and Per Capita Income: Components Separated

Independent variables	1 Annual per capita income growth, 2002–2005	2 Annual per capita income growth, 2002–2011	3 Ln per capita income 2011
Size of government	0.004***	0.003***	0.009
	0.001	8.60E-04	0.008
Tax freedom	3.7E-04	−6.5E-04	−0.007
	0.001	0.001	0.013
Labor market freedom	0.001	−2.8E-04	0.041***
	0.002	1.00E-03	0.012
Constant	0.028	−0.043	8.39***
	0.071	0.042	0.452
Other controls	YES	YES	YES
State fixed effects	YES	YES	YES
N	381	381	381
R^2	0.667	0.704	0.945

*10%, **5%, and ***1% significance levels.

Note: Standard errors clustered by state, 49 clusters. Regressions also include the other controls listed in table 4 and described in the appendix.

Population Growth and Economic Freedom

The results of the previous section are similar to those of Bologna and coauthors, who also examined the relationship between MSA economic freedom and per capita income growth. In this section, I extend their analysis and examine the relationship between MSA economic freedom and population growth. Population growth is a measure of an area's extensive growth

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[57] The relationship between labor market freedom and ln per capita income is partially mechanical because one component of labor market freedom is the ratio of the state minimum wage over MSA per capita income. A lower ratio that is attributable to higher MSA per capita income positively affects labor market freedom and links it with per capita income on the left-hand side of the regression. However, factor is not a concern in the growth rate regressions, which control for the initial level of per capita income, and they are the primary regressions of interest.

and may be occurring even if there is no noticeable change in an area's per capita income growth, provided that inter-MSA migration is occurring.

The results displayed in table 7 are similar to those in table 5, but the dependent variables are population growth from 2002 to 2005, 2002 to 2011, and 2002 to 2015. I report the same coefficients in both tables because they are common in the literature and allow the reader to compare the relationships across the dependent variables.

Contrary to per capita income growth, overall economic freedom is not associated with population growth over any of the periods examined. Other controls, such as percentage of adults with a bachelor's degree or higher, average January temperature, and percentage of employment in construction, are consistently positive and significant, especially over the longer periods. The construction employment coefficient is interesting, and the strong, positive relationship could be attributed to a correlation with the area's housing supply elasticity (i.e., a larger proportion of MSA employment in construction in 2000 is at least partially a result of building being relatively easy in that MSA).

However, when the overall score is separated into its components, I find that tax freedom is positively associated with greater population growth over the longer periods, as shown in columns 2 and 3 of table 8.

Table 7. Economic Freedom and Population Growth: Regression Results

Independent variables	1 Population growth, 2002–2005	2 Population growth, 2002–2011	3 Population growth, 2002–2015
Overall freedom	−0.005	0.001	0.001
	0.007	0.017	0.024
Population 2002	1.71E-09	1.92E-09	5.63E-09
	1.6E-09	3.2E-09	4.1E-09
Per capita income 2002	−2.8E-06***	−7.6E-06***	−9.3E-06***
	9.4E-07	2.4E-06	3.0E-06
Percentage of employment, construction	0.017***	0.036***	0.053***
	0.004	0.008	0.010
Percentage of employment, manufacturing	−6.6E-05	−0.001	4.5E-05
	0.001	0.002	0.002
Percentage of employment, retail trade	0.007**	0.021***	0.028**
	0.003	0.008	0.011
Percentage of self-employment	−0.007*	−0.016**	−0.022**
	0.003	0.007	0.010
Percentage of bachelor's degree or higher	0.003*	0.009**	0.012**
	0.002	0.004	0.005
Percentage age 20–64	−0.005***	−0.009**	−0.009*
	0.002	0.004	0.005
Persons per square mile of land	−1.04E-06	3.30E-06	3.73E-06
	3.3E-06	7.6E-06	9.5E-06
Square meters of water per person	−0.002**	−0.005*	−0.005*
	0.001	0.002	0.003
Average January temperature	4.5E-04	0.002*	0.002**
	4.4E-04	0.001	0.001
Constant	0.475***	0.696*	0.574
	0.155	0.374	0.489
Other controls	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes
N	381	381	381
R^2	0.559	0.648	0.701

*10%, **5%, and ***1% significance levels.

Note: Standard errors clustered by state, 49 clusters. Regressions also include the other controls listed in table 4 and described in the appendix.

Table 8. Economic Freedom and Population Growth: Components Separated

Independent variables	1 Population growth, 2002–2005	2 Population growth, 2002–2011	3 Population growth, 2002–2015
Size of government	−0.007	−0.006	−0.012
	0.007	0.014	0.018
Tax freedom	0.007	0.025**	0.033***
	0.005	0.009	0.011
Labor market freedom	−0.004	−0.015	−0.015
	0.012	0.023	0.027
Constant	0.389***	0.465	0.272
	0.138	0.326	0.438
Other controls	YES	YES	YES
State fixed effects	YES	YES	YES
N	381	381	381
R^2	0.566	0.656	0.709

*10%, **5%, and ***1% significance levels.

Note: Standard errors clustered by state, 49 clusters. Regressions also include the other controls listed in table 4 and described in the appendix.

The other coefficients are once again removed for the sake of brevity, but they did not change much between models. The results in table 8 show that government size and labor market freedom have a negative but insignificant association with population growth, while tax freedom has a larger and significant positive relationship with population growth from 2002 to 2011 and from 2002 to 2015. A one standard deviation change in tax freedom is associated with a 2.08 percentage point increase in total population growth from 2002 to 2011 and a 2.74 percentage point increase from 2002 to 2015. Both of these changes are about one-fourth of a standard deviation of the amount of population growth over the respective time period.

As described in table 3, the tax freedom measure captures the proportion of total MSA income that is taken from individuals in order to fund government. Thus, a natural interpretation of this finding is that areas that take fewer resources from the private sector, when the size of government and other factors are held constant, attract more people. If government spending and

quality of government goods and services are positively related at the local level—a plausible but certainly not airtight assumption—this finding is consistent with the idea that there is more population growth in areas where governments provide a given level and quality of goods and services at the lowest cost, if all else is equal.

This analysis reveals that the relationship between policies, government impediments, and urban development is complicated: different components of the economic freedom index are associated with particular outcomes. On one hand, overall freedom is positively related to faster per capita income growth and higher per capita incomes, but government size appears to be the primary driver of the former relationship while labor market freedom is the primary driver of the latter. On the other hand, the tax freedom component of the index has the strongest positive relationship with population growth. Table 9 summarizes all the statistically significant effects.

Table 9. Summary of Changes in Outcomes Associated with a One Standard Deviation Change

Economic freedom component	Coefficient	SD of score	Change
Overall freedom			
Per capita income growth, 2002–2005	0.006***	0.86	0.52%
Per capita income growth, 2002–2011	0.003**	0.86	0.26%
Ln per capita income, 2011	0.117***	0.86	0.10
Labor market freedom			
Ln per capita income, 2011	0.041***	1.2	0.05
Tax freedom			
Population growth, 2002–2011	0.025***	0.83	2.08%
Population growth, 2002–2015	0.033***	0.83	2.74%
Government size			
Per capita income growth, 2002–2005	0.004***	1.14	0.46%
Per capita income growth, 2002–2011	0.003***	1.14	0.34%

Note: The index component associated with the change displayed in the last column is listed above each dependent variable. Standard deviation (SD) column shows the standard deviation of the index component listed above the dependent variable.

Conclusion

In his discussion of inner cities, Porter argues that sustainable economic development can be created only "through private, for-profit initiatives, and investments based on economic self-interest and genuine competitive advantage" and not "artificial inducements, government mandates, or charity."[58] Though Porter's focus is inner cities, his argument is, in theory, applicable everywhere. Alternatively, the hydraulic approach is one of artificial inducements and government mandates that can crowd out and limit private, for-profit initiatives and, as discussed earlier, has been largely unsuccessful.

In this paper, I present a framework for analyzing intercity competition for people and firms. Cities can compete along several dimensions, but most of the policies they implement focus on dimensions that correspond to a hydraulic approach to urban development, such as targeted tax incentives and subsidized investment in infrastructure, stadiums, and businesses.

In contrast to the aforementioned literature, I examine the relationship between differences in government impediments across MSAs and two measures of urban economic development: (a) population growth and (b) per capita income growth. My measure of government impediments is an MSA economic freedom index from Stansel.

I find that MSAs with less taxation (more tax freedom) experienced more extensive growth, measured as population growth, from 2002 to 2011 and from 2002 to 2015. The relationship between overall economic freedom and intensive growth, measured as per capita income growth, was positive and significant, with government size being the primary factor.

The plight of America's declining cities is well known, but policies capable of halting or reversing such decline remain elusive. The traditional remedies of intergovernmental grants and

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[58] Porter, "New Strategies for Inner-City Economic Development," 12.

subsidies, subsidized private investment, and tax incentives and abatements have been largely ineffective. There are theoretical reasons to believe that local rules and economic policies can facilitate or inhibit urban economic development, and this paper is a step toward a better understanding of that relationship.

The measures of such policies used in this paper broadly capture the economic results of local policies, but more granularity would further clarify the relationship between local rules and economic growth. Comparative case studies that examine the rules and institutions of individual cities and local urban development would help us better understand the mechanisms underlying the relationships found in this paper.

Appendix: Variables List

Variable	Description
Ln per capita income, 2011	Natural log of per capita personal income, 2011, excluding transfers, 2005 dollars
Average percentage change in per capita income, 2002–2005	Average annual growth rate of per capita personal income, 2002–2005
Average percentage change in per capita income, 2002–2011	Average annual growth rate of per capita personal income, 2002–2011
Population growth, 2002–2005	Total MSA population growth from 2002 to 2005
Population growth, 2002–2011	Total MSA population growth from 2002 to 2011
Population growth, 2002–2015	Total MSA population growth from 2002 to 2015
Economic freedom controls, 2002	
Overall freedom	Overall economic freedom score
Size of government	Size of government freedom score
Tax freedom	Takings and discriminatory taxation freedom score
Labor market freedom	Labor market freedom score
Economic controls, 2000	
Population, 2002	Population in 2002
Per capita income, 2002	Per capita personal income in 2002, excluding transfers, 2005 dollars
Percentage of employment, federal	Percentage of population employed by the federal government, 2002
Percentage of employment, agriculture, forestry, and fishing	Percentage of population age 15 + employed in agriculture, forestry, or fishing
Percentage of employment, construction	Percentage of population age 15 + employed in construction
Percentage of employment, manufacturing	Percentage of population age 15 + employed in manufacturing
Percentage of employment, wholesale trade	Percentage of population age 15 + employed in wholesale trade
Percentage of employment, retail trade	Percentage of population age 15 + employed in retail trade
Percentage of employment, transportation and warehousing	Percentage of population age 15 + employed in transportation or warehousing
Percentage of employment, information	Percentage of population age 15 + employed in information
Percentage of employment, finance	Percentage of population age 15 + employed in finance, insurance, or real estate
Percentage of employment, professional and scientific	Percentage of population age 15 + employed in professional or scientific services
Percentage of employment, education and health	Percentage of population age 15 + employed in education or health services
Percentage of employment, arts and entertainment	Percentage of population age 15 + employed in arts, entertainment, or recreation
Percentage of employment, other services	Percentage of population age 15 + employed in other services (except public administration)
Percentage of self-employment	Percentage of population age 15 + self-employed

Variable	Description
Education controls, 2000	
Percentage high school graduate	Percentage of population age 25 + with a high school diploma
Percentage with some college	Percentage of population age 25 + with an associate degree or some college
Percentage with bachelor's degree or higher	Percentage of population age 25 + with a bachelor's degree or higher
Demographic controls, 2000	
Percentage age 15–19	Percentage of population ages 15–19
Percentage age 20–64	Percentage of population ages 20–64
Percentage age 65 or older	Percentage of population 65 or older
Percentage black	Percentage of population that is black
Percentage Hispanic	Percentage of population that is Hispanic
Percentage below poverty level	Percentage of population below poverty level, 1999
Geography and climate controls, 2000	
Persons per square mile of land	Population density per square mile
Square meters of water per person	Square meters of water per person
Average January temperature	Average January temperature

Note: Data from 2000 unless noted otherwise.